

PERCEIVED BURDENSOMENESS: EXPLORING POTENTIAL VULNERABILITY  
FACTORS

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**Title**

Perceived Burdensomeness: Exploring Potential Vulnerability Factors

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**DOCTOR OF PHILOSOPHY**

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## **ABSTRACT**

Suicide affects hundreds of thousands of people around the world each year. Despite many coordinated efforts to address this problem, in multiple domains, these numbers have risen over the last decade. The Interpersonal Theory of Suicide is a relatively recent theory that has received considerable attention and investigation. Perceived burdensomeness is one of the constructs from this theory. The belief that you are a burden on others is a robust predictor of suicidal ideation and, to a less understood extent, suicidal behavior. To my knowledge, few studies have looked at the factors that lead to perceived burdensomeness. This study was conducted to begin to address this gap in the literature. Attributional style, hopelessness, socially-prescribed perfectionism, and self-esteem were identified as potential vulnerability factors for perceived burdensomeness. One hundred twenty individuals were surveyed about these constructs and perceived burdensomeness. Participants were also asked to read three vignettes based on interviews with individuals with lived experiences related to suicide attempts. Following each vignette, participants were asked to report the level of perceived burdensomeness that they anticipated that they would feel in that situation as an additional analogue measure of perceived burdensomeness. It was found that attributional style, socially-prescribed perfectionism, and self-esteem predicted current levels of perceived burdensomeness. Self-esteem was the only variable that predicted analogue levels of perceived burdensomeness, beyond current levels of depression. This exploratory study has the potential to contribute to the literature by guiding and informing future research related to better understanding or reducing perceived burdensomeness.

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## TABLE OF CONTENTS

|   |     |
|---|-----|
| ABSTRACT .....  | iii |
| ACKNOWLEDGMENTS .....   | iv  |
| LIST OF TABLES .....  | vi  |
| PERCEIVED BURDENSOMENESS: EXPLORING POTENTIAL VULNERABILITY<br>FACTORS..... | 1   |
| Perceived Burdensomeness .....  | 1   |
| Study Rationale .....   | 6   |
| Method .....  | 10  |
| Participants .....  | 10  |
| Measures.....   | 11  |
| Materials.....  | 16  |
| Vignettes.....  | 16  |
| Procedure.....  | 16  |
| Results .....   | 18  |
| Manipulation Check .....  | 21  |
| Predicting Current Levels of Perceived Burdensomeness.....                  | 22  |
| Predicting Analogue Levels of Perceived Burdensomeness .....                | 24  |
| Discussion .....  | 26  |
| REFERENCES .....  | 35  |

## LIST OF TABLES

| <u>Table</u>  | <u>Page</u> |
|---|-------------|
| 1. Descriptive statistics, reliability, and correlations for all continuous variables ..... | 21          |

# **PERCEIVED BURDENSOMENESS: EXPLORING POTENTIAL VULNERABILITY FACTORS**

Suicide continues to be a prevalent concern in the United States and around the world. Recent epidemiological data reveals that suicide was the tenth leading cause of death in the United States, with approximately 43,000 deaths (Centers for Disease Control and Prevention, 2014). Looking globally, in 2010 approximately 800,000 people died by suicide (World Health Organization, 2016). In response to these deaths and their impact, many individuals and organizations have undertaken prevention efforts through research, advocacy, education, and outreach. Despite this, recent data reveals that the rates of both suicide attempts (Olfson et al., 2017) and deaths by suicide (Bastiampillai, Sharfstein, & Allison, 2016) have risen slightly over the last ten years. In addition to current efforts, it is clear that more work is needed to reduce suicide. One potential avenue to better understand and prevent suicide is to focus on the development of constructs that are high in clinical and research utility. The following paragraphs will briefly review what we know about perceived burdensomeness - a construct worthy of further attention and consideration. Perceived burdensomeness has been used to predict suicidal ideation and suicidal behaviors. It has also been the target of a specific intervention to prevent suicide. Following the review, a study will be proposed to further our understanding of the causes and nature of perceived burdensomeness.

## **Perceived Burdensomeness**

Researchers have been theorizing why suicide happens for over a century (Durkheim, 1897). One modern theory is Joiner's Interpersonal Theory of Suicide (IPTS; Joiner, 2005; Van Orden et al., 2010). The IPTS was developed to improve on existing theories of suicide in a few specific ways. First, the IPTS was designed to be more empirical, and subsequently falsifiable,

than previous theories. It consists of constructs that are concretely defined and empirically measurable. Second, the IPTS was designed to predict who desires suicide and then to understand who among those individuals possesses the capacity to die by suicide. In this way, it is meant to predict who is at the greatest risk of dying by suicide. The IPTS consists of three constructs. The first two constructs, thwarted belongingness and perceived burdensomeness, are related to an individual's desire for suicide. Thwarted belongingness reflects the extent to which an individual feels that they don't connect or belong to any individual or group and have unmet needs for social connectedness. Perceived burdensomeness reflects the extent to which individuals believe that the people around them, or society as a whole, would be better off if they were gone or dead. Perceived burdensomeness is thought to consist of two dimensions. One dimension is related to the extent to which you perceive yourself to be a burden on others while the other dimension is related to self-loathing. The self-loathing dimension consists of low self-esteem, self-blame, and agitation. In this way, the feelings of being a burden are combined self-loathing to create perceived burdensomeness as conceptualized in the IPTS. The third construct is acquired capability, which reflects the individual's fearlessness about death and capacity for the act of dying by suicide.

Since its inception, the IPTS has received considerable attention from researchers (see Chu et al., 2017 for a comprehensive review). Not only have researchers tested the theory as a whole, but they have also started to investigate the individual constructs on their own. Among the constructs related to desire for suicide, there is some suggestion that thwarted belongingness has historically received more empirical attention than perceived burdensomeness (Hill & Pettit, 2014; Peak et al., 2016). However, it is clear that both constructs have received the attention of

researchers. Perceived burdensomeness has been investigated in a variety of settings with different measures across multiple samples.

As perceived burdensomeness is associated with desire for suicide, many studies have focused on how well it predicts suicidal ideation, or thoughts about dying by suicide. Not only has perceived burdensomeness been shown to predict suicidal ideation generally (Van Orden, Lynam, Hollar, & Joiner, 2006), but this link has been replicated with psychiatric outpatients (Van Orden, Cukrowicz, Witte, & Joiner Jr., 2012), individuals with borderline personality disorder (Bryant, 2014), terminally-ill cancer patients (Akechi et al., 2004; Wilson, Curran, & McPherson, 2005), chronic pain patients (Kanzler, Bryan, McGeary, & Morrow, 2012; Wilson, Kowal, Henderson, McWilliams, & Péloquin, 2013), military personnel (Bryan, 2011; Bryan, Clemans, & Hernandez, 2012), adults from South Korea when compared to adults from the United States (Suh et al., 2017), and international undergraduate students when compared to domestic undergraduate students (Servaty-Seib, Lockman, Shemwell, & Reid Marks, 2016). The link between the presence of perceived burdensomeness and the experience of suicidal ideation has been highly replicated and appears to be consistent, robust, and reliable. It is worth mentioning, however, that most of these studies are cross-sectional in nature. Though investigators in this area have started suggesting more prospective studies with varied methods for the future (Hill & Pettit, 2014).

Perceived burdensomeness has also been found to predict who might attempt or die by suicide. An early longitudinal study found that among 3,000 psychiatric patients, burdensomeness was identified as a predictor of death by suicide (OR = 02.49; Motto & Bostrom, 1990). More recent studies have replicated this finding by analyzing suicide notes. Cox and colleagues coded suicide notes left by military personnel and found that approximately 36%

of them were found to contain perceptions of burden (Cox et al., 2011). This link also continued, though at a lower rate, in two other studies wherein Lester and Gunn (2012) and Gunn and colleagues (2012) found that 15% and 10% of coded notes, respectively, contained indications of perceived burdensomeness. Joiner and colleagues (Joiner et al., 2002) found that elements of perceived burdensomeness in suicide notes was associated with more lethal means and predicted who died among a group of individuals who attempted suicide. As most studies focus on perceived burdensomeness in predicting desire for suicide, the extent to which it predicts suicidal behavior is not yet clear.

Researchers have tried to address the assumed causes of perceived burdensomeness by considering the protective factors and avenues for intervention. While looking for protective factors, Collins and colleagues (Collins, Best, Stritzke, & Page, 2016) experimentally induced perceived burdensomeness and thwarted belongingness in participants. They found that students who experienced zest for life or a brief mindfulness induction were less likely to report feelings of perceived burdensomeness or thwarted belongingness afterwards. Similarly, students who are more likely to make meaning of the stress in their life seem to be less likely to experience suicidal ideation through perceived burdensomeness or thwarted belongingness (Lockman & Servaty-Seib, 2016).

There is only one published attempt to develop an intervention focusing specifically on thwarted belongingness. Hill (2016) developed and conducted a randomized control trial for a program called LEAP (*Learn, Explore, Assess your options, Plan*). LEAP is a web-based program that aims to reduce perceived burdensomeness by challenging associated cognitions. The program was partially successful. Participants in the LEAP program reported lower levels of perceived burdensomeness at follow-up than those in the control group. They did not, however,

report lower levels of suicidal ideation. This suggests that suicidal ideation may result from multiple sources of distress (*i.e.* perceptions of an unsolvable problems, hopelessness, lack of belongingness, etc.) It may also be that perceived burdensomeness is not an appropriate target, or that reducing perceived burdensomeness alone is not enough to reduce suicidal ideation. Another explanation may be that a web-based delivery method is not the appropriate vehicle for this type of intervention. Alternatively, it may be that challenging cognitions isn't the right target for intervention when targeting perceived burdensomeness.

There is little ambiguity as to whether perceived burdensomeness is a vulnerability factor for suicidal ideation or behaviors. However, I am only familiar with one study that has attempted to identify what factors may be associated with experiencing perceived burdensomeness as an outcome. While examining the Five Factor Model of personality (Digman, 1990), DeShong and colleagues (DeShong, Tucker, O'Keefe, Mullins-Sweatt, & Wingate, 2015) found that neuroticism was positively associated and extraversion was negatively associated with perceived burdensomeness. While interesting, these results do not lend themselves to informing intervention efforts as personality traits tend to be relatively stable and difficult to change. We also know that specific circumstances (*e.g.*, homelessness, incarceration, physical illness, etc.; Van Orden et al., 2010) are thought to facilitate perceived burdensomeness. This leaves the question as to whether there are psychological variables that make it more likely for someone to perceive that they are a burden on others. If there are, this would have implications for understanding perceived burdensomeness, evaluating risk, and developing potential interventions.

## Study Rationale

In the absence of previous data, the interpersonal theory of suicide served as a framework for identifying relevant variables for predicting perceived burdensomeness. Four potential vulnerability factors were chosen. The factors included attributional style, socially-prescribed perfectionism, hopelessness, and self-esteem. Each vulnerability factor and the rationale for including it are discussed in the subsequent paragraphs. There are many other potential vulnerability factors. These four were chosen as a starting point from which to build and guide future research.

The first potential vulnerability factor was attributional style. Attributional style is thought to relate to major depressive episodes through the learned helplessness hypothesis (Abramson, Seligman, & Teasdale, 1978). The main premise is that individuals who attribute the causes of negative events to themselves, as being stable across time, and as occurring across many important contexts are more likely to experience depressive episodes (Peterson et al., 1982). Not all three facets of attributional style are still thought to explain major depressive episodes, though they might be useful in understanding who experiences perceived burdensomeness. Specifically, we know that the stable and global attributions are predictive of depression while internal attributions of cause are not (Abramson, Metalsky, & Alloy, 1989). The internal/external dimension may still play a role in perceived burdensomeness though. Feeling that oneself is a burden involves judgment about oneself. It is therefore logical that someone who feels like they are a burden on others maybe more likely to determine that they are at fault when judging the causes of negative events. Beyond that, we know that overall maladaptive attributional styles have been found to predict suicidal ideation and behavior (Joiner & Rudd, 1995; Lewinsohn, Rohde, & Seeley, 1994; Priester & Clum, 1992; Rotheram-Borus,

Trautman, Dopkins, & Shrout, 1990; Summerville, Kaslow, Abbate, & Cronan, 1994) while adaptive attributional styles seem to serve as a buffer (Greening & Stoppelbein, 2002; Hirsch, Wolford, LaLonde, Brunk, & Parker-Morris, 2009). One could imagine that through the same mechanisms that attributional style leads to depressive episodes, it could also lead to perceived burdensomeness. Consider the following: an individual has recently become unexpectedly financially dependent on his family. If he engages in a maladaptive attributional style, he might perceive the situation to be entirely his fault, unlikely to change or get better, and that he might be relying on his family in more ways than just financially. By attributing his financial dependence to internal, stable, and global causes, he might be more likely to experience perceived burdensomeness than if he had more a more adaptive attributional style.

The second potential vulnerability factor was socially-prescribed perfectionism. Perfectionism is thought to be a multi-dimensional construct (Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991) and has been implicated in the development of many psychological disorders (Flett & Hewitt, 2002). More specifically, a review of nearly 30 studies suggests that the link between perfectionism and suicidal thoughts and behaviors is reliable. The review also suggests that when predicting suicidality, perfectionism related to interpersonal events might be particularly important (O'Connor, 2007). This has led one group of researchers to wonder about the interaction between the variables of the IPTS and perfectionism in predicting suicidal ideation. Using the *Almost Perfect Scale – Revised* (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001), it was found that the link between maladaptive perfectionism and suicidal ideation was mediated by perceived burdensomeness (Rasmussen, Slish, Wingate, Davidson, & Grant, 2012). The authors note that while they used the APS-R, which focuses on maladaptive versus adaptive perfectionism, future research should test the relationship using perfectionism scales

that include social components of perfectionism, such as the Multidimensional Perfectionism Scale (Hewitt et al., 1991). As burdensomeness is an inherently social construct, including a measure of perfectionism related to social concerns provides for a more specific test of the role of perfectionism.

The third potential vulnerability factor was hopelessness. The role of hopelessness in the development and maintenance of depression has been studied extensively through the hopelessness theory of depression (Abramson et al., 1989). Hopelessness has also been found to be one of the most robust predictors of suicidal ideation and behavior (Beck, Brown, Berchick, Stewart, & Steer, 2006). When assessing the current state and future directions of the IPTS, Ribeiro and Joiner suggest that hopelessness may play a role in the model (Ribeiro & Joiner, 2009). When considering hopelessness, it is conceivable to imagine that someone who was prone to experiencing it, who also became a burden on those around them, might be more likely to develop the distress related to perceived burdensomeness as described in the IPTS. If one were to believe that a situation was never going to get better, it is possible they would be inclined to believe that the people around them would simply be better off if they were gone. Including a measure of hopelessness in the study design provided an opportunity to more directly test whether such a link existed.

The last potential predictive factor was self-esteem. Low self-esteem is a primary topic in over 25,000 publications and is well associated with the development of psychopathology (Zeigler-Hill, 2011). Unsurprisingly, data also suggest that low self-esteem is associated with suicidal ideation (Martin, Richardson, Bergen, Roeger, & Allison, 2005). One study found that other-based self-esteem, how one perceives they are evaluated by others, was a more robust predictor of suicidal ideation than self-based self-esteem (Bhar, Ghahramanlou-Holloway,

Brown, & Beck, 2008). Because burdensomeness is inherently about one's relationship to others, it is possible that other-based self-esteem may be a more likely to be associated with burdensomeness than self-esteem. This could also inform us about whether self-esteem and its components would be a useful target for interventions focusing on reducing perceived burdensomeness.

In summary, suicide continues to be a public health problem in our country and around the world. The continued development of theoretical constructs with clinical and research utility is necessary to address this problem. The IPTS has provided a useful framework for advancing research. Perceived burdensomeness maintains its predictive power across different samples from different settings with different types of measurement. Many of these studies conclude with suggestions that perceived burdensomeness may serve as an effective target for intervention for suicidal ideation. Despite this, only one published study has attempted to do so. It succeeded in reducing perceived burdensomeness but failed to reduce suicidal ideation (Hill, 2016). No studies that I am aware of have attempted to understand what psychopathological factors lead to perceived burdensomeness as an outcome. Doing so may help to clarify the construct, a future direction identified by Joiner himself (Ribeiro & Joiner, 2009), and inform future intervention efforts.

The following study was conducted to begin addressing this gap. Participants were first asked to report on their levels of the individual difference factors described above as well as their current levels of depressive symptoms, suicidality, and perceived burdensomeness. They were also presented with three vignettes. Each vignette describes the situations and environment an individual was in surrounding a suicide attempt. The vignettes are modified versions of interviews of suicide attempt survivors from the Life Through This project (Stage, 2014).

Following each vignette, participants were asked to report on the overall level of perceived burdensomeness and negative emotions that they anticipated that they would feel if they were the person in the vignette that they just read.

The primary research question was whether the individual differences described above predict one's level of perceived burdensomeness beyond current depressive symptoms. Perceived burdensomeness was captured in two ways. The first measure was the participants' current reported levels of perceived burdensomeness. The second was the analogue measure of perceived burdensomeness reported in response to the vignettes. This was included for a few specific reasons. The rates of depressive symptoms in college students is reasonably high with surveys measuring depressive symptoms revealing a reasonable prevalence rate and variance. However, the rate of suicidal ideation tends to be lower. This suggests that it is also likely that the number of students experiencing perceived burdensomeness is low. Adding this analogue measure of perceived burdensomeness allowed us an additional way to determine whether or not these individual differences predict perceived burdensomeness.

## Method

### *Participants*

A power analysis using GPower 3.1.9.2 was conducted to determine the number of participants. No similar previous studies have been conducted from which to estimate an effect size. To balance being cautious while confident about the hypotheses, a modest effect size,  $f^2 = 0.15$ , was used to calculate the sample size required to have adequate power, 0.80. An analysis was done for each of the planned regression models. The analyses ranged in their number of included variables from one tested predictor and two total predictors to three tested predictors and four total predictors. Based on the analyses, it was calculated that 55 to 77 participants

would be required for an adequate level of power. To ensure adequate power for the different regression models, 120 total participants was decided on as an *a priori* sample size. In total, 275 individuals opened in the survey page. However, the range of responses varied from simply opening the survey without providing a single response to completing it in entirety. Once an individual started the survey, they had seven days to complete it before it automatically closed. Survey recruitment continued until the number of complete data sets reached the pre-determined sample size. In the final sample, 120 total participants (93 identified as women, 26 identified as men, and 1 preferred to self-identify their gender) were recruited and included. The mean age was 23.71 ( $SD = 6.64$ ). Participants were recruited from the university at large with the final sample including undergraduate students, graduate students, and staff. Participants responded to the survey in exchange for course credit or a chance to be entered in a drawing for one of two \$50 gift cards.

Informed consent was collected before participation. Each participant was debriefed following their participation. Participants who were identified as being at risk on the suicidality measure were contacted to assess risk and provide further resources. All participants were treated in accordance to the American Psychological Association's ethical code of conduct and guidelines.

### *Measures*

*Cognitive Style Questionnaire (CSQ)*. The CSQ (Haefel et al., 2008) is an update to the original *Attributional Style Questionnaire (ASQ)*; Peterson et al., 1982) and was included as a measure of attributional style. The CSQ presents participants with twenty-four scenarios, twelve which are "good" and twelve which are "bad." In this study, only the bad scenarios were presented (items 2, 4, 6, 7, 9, 10, 14, 16, 17, 18, 21, and 23). For each scenario, participants are

asked to provide a potential cause for why the scenario happened and then respond to further items about the scenario. The items have scales that range from 1 to 7 that assess the locus of impact (whether the cause is likely due to internal or external factors), stability (whether the cause is likely to continue to impact situations across time), globality (whether the cause will impact other situations in life), consequences (the number of problems the cause will create), and self-worth (the amount to which the cause suggests the respondent is flawed). An average composite is calculated based on the item responses for each situation, across situations. The internal/external item is still included in the measure but is no longer included in the composite score as past literature shows it is not related to overall cognitive styles related to the development of depressive symptoms. The internal subscale was included as a measure of internal attributions while the total score was included as a measure of overall hopelessness attributions. Scores range from 1 to 7 with higher numbers indicating a poorer attribution style. A review of over 30 studies indicate that the CSQ has an internal consistency alpha coefficient between 0.88 and 0.96 (Haefel et al., 2008) and a test-retest reliability of 0.80 (Alloy et al., 2000).

*Multidimensional Perfectionism Scale (MPS) – Socially-Prescribed Subscale.* The Socially-Prescribed Subscale consists of 15 items from the 45-item MPS, which was developed to measure the respondent's level of perfectionism (Hewitt & Flett, 1990). For each item, participants respond on a 1 (Disagree) to 7 (Agree) Likert-type scale rating the degree to which they disagree or agree that the item describes them. Each item is a statement that describes a specific characteristic related to perfectionism. The overall measure provides two additional subscales including Self-Oriented and Other-Oriented perfectionism. Scores for all three subscales are calculated by taking the sum of each item. Higher scores on each subscale indicates

a higher level of perfectionism in that domain. The subscales have demonstrated good internal consistency (Cronbach's alpha = 0.86, 0.82, and 0.87, respectively) and good reliability across time (Cronbach's alpha = 0.88, 0.85, and 0.75; Hewitt et al., 1991). The MPS Socially-Prescribed scale was included as a measure of perfectionism related to social concerns.

*The Hope Scale (THS)*. The THS is a 12-item measure designed to capture the respondent's overall level of hope (Snyder et al., 1991) and was included as a measure of hopelessness. Participants are asked to respond to each item on a 1 (Definitely False) to 8 (Definitely True) Likert-type scale asking about the degree to which each item describes them. The THS can be broken into an Agency Scale and a Pathway scale or simply taken as a composite hope score. The subscale scores and total score are calculated by adding up the responses for each item. Higher scores indicate a higher level of hope. The THS has been shown to have good internal consistency (Cronbach's alpha between 0.74 and 0.84 for the total score) and good test-retest reliability (Cronbach's alpha between 0.76 and 0.85; Snyder et al., 1991). It should also be noted that even though it is highly correlated (0.57), it has been suggested that the THS be used rather than the *Beck Hopelessness Scale* (the typical measure of hopelessness; Beck, Weissman, Lester, & Trexler, 1974) for non-clinical samples (Steed, 2001).

*Rosenberg Self-Esteem Scale (RSES)*. The RSES is a 10-item measure which asks the respondent to rate various good and bad statements about themselves (Rosenberg, 1965). Each item has a 4-point Likert-type scale that ranges from Strongly Agree to Strongly Disagree on which the respondent rates the degree to which the statement matches their general feelings about themselves. The ratings on each item are summed for a total score. Higher scores suggest a lower level of self-esteem. The RSES has been shown to be reliable (Cronbach's alpha between 0.72 and 0.88; Gray-Little, Williams, & Hancock, 1997) and appears to be appropriate for use in

a university sample (Martín-Albo, Núñez, Navarro, & Grijalvo, 2007). The RSES was included as a measure of self-esteem.

*Interpersonal Needs Questionnaire (INQ-15)*. The INQ-15 is a fifteen-item measure designed to capture one's level of perceived burdensomeness and thwarted belongingness (Van Orden et al., 2012). Participants respond to each item on a scale from 1 (Not at all true for me) to 7 (Very true for me) asking about their recent beliefs and experiences. The INQ-15 has perceived burdensomeness and thwarted belongingness subscales. The subscales have good reliability and criterion validity (Cronbach's alpha = 0.92 for perceived burdensomeness and 0.90 for thwarted belongingness; Van Orden et al., 2012). The fifteen-item version was selected as previous research suggests using this, or the ten-item, versions (Hill et al., 2015). The INQ-15 was included as a measure of perceived burdensomeness.

*Center for Epidemiologic Studies Depression Scale (CES-D)*. The CES-D is a twenty-item measure that asks the respondent to report how they have been feeling or behaving in the past week (Radloff, 1977). Each item is written to assess for a specific symptom of depression. Participants respond on a four-point Likert-type scale ranging from "Rarely or none of the time (less than 1 day)" to "Most or all of the time (5-7 days)" for each item. The value of each item is summed for a total score that ranges from 0 to 60 with higher scores indicating greater symptoms of depression. The CES-D has demonstrated good internal consistency (Cronbach's alpha = 0.85 and 0.90 for ) and adequate test-retest reliability after three months (Cronbach's alpha = 0.48; Radloff, 1977). The CES-D was included to measure depressive symptoms and is used as a covariate in the regression models.

*The Suicide Behaviors Questionnaire – Revised (SBQ-R)*. The SBQ-R is a four-item scale designed to measure level of suicide risk (Osman et al., 2001). The items ask about lifetime

ideation or attempts, frequency of ideation in the past year, current risk of suicide attempt, and future risk of suicide attempt. The four items have a five or six-point scale where severity and risk increase with each point. A total score is calculated by summing the value of each item endorsed. Higher scores indicate greater suicide risk with a cutoff of seven or greater indicating risk for undergraduate college students. The SBQ-R has good internal consistency (Cronbach's Alpha = 0.84). The SBQ-R was not included as part of any specific analytical plans. This measure was included as a screener for participants who might have been at risk for suicide, as the content of the vignettes may have been particularly challenging for these individuals. It was not included in the data analysis plan. Individuals who were elevated on this scale were contacted both by phone and email to ensure that they were safe and were aware of local mental health resources.

*Interpersonal Reactivity Index (IRI)*. The IRI is a 28-item measure of multidimensional empathy (Davis, 1980). The items ask about the respondent's ability empathize with people around them or characters in the media. Participants respond on a 5-point Likert-type scale ranging from A (Does not describe me well) to D (Describes me very well). The value of each item is summed for a total score wherein higher scores indicate greater ability to empathize. The scale also includes four subscale including the perspective-taking scale, the fantasy scale, the empathic concern scale, and the personal distress scale. The fantasy scale was included as a manipulation check for participants' ability to empathize with the individuals being interviewed in the vignettes. The fantasy scale demonstrates good test-retest reliability (Cronbach's alpha between 0.79 and 0.81).

## Materials

### *Vignettes*

Participants were asked to read three vignettes that are edited versions of interviews in the Live Through This project (Stage, 2014). The Live Through This project was started by Dese'rae L. Stage to document the experiences of individuals who have attempted suicide. The selected interviews were chosen because the interviewees were near college age, ideally making them more relatable for college students. The interviews were edited to make them shorter in length, to remove explicit identifying information, and to remove graphic details related to the suicide attempt. The primary goal was to use reports of lived experiences to create vignettes describing the situations and environment that individuals at risk for suicide might be experiencing. Participants were given the following instructions prior to reading each vignette, "Please read the following story. This story comes from an interview with someone describing a specific period of their life. Imagine that you are the person being interviewed. As you read the story, immerse yourself into what it would feel like to have those experiences. Following the story, there will be six questions. Please answer those questions considering how you might be feeling and behaving if you were in the story you just read." The reason for having participants report an analogue measure of perceived burdensomeness in addition to their actual levels of perceived burdensomeness is due to low overall base rates in an undergraduate population. This method was included to reduce any potential floor effects that may have existed in this population. The vignettes are available in the Appendix.

### Procedure

Participants were recruited to complete this study online. Participants were recruited in two ways. First, participants were able to complete this study in exchange for course credit in

their undergraduate courses and were able to sign up through an online survey database. Second, participants were able to complete the study in exchange for being entered into a drawing for one of two \$50 gift cards and were recruited through a weekly, campus-wide recruitment email asking for volunteers who were interested. If they choose to participate, participants started by reading a thorough description of the study. They were told that the study consisted of reading some brief stories about people who have attempted suicide and responding to variety of questionnaires that ask about how they feel, think, and respond to difficult life events. They were then able to view and print the informed consent. Participants completed the questionnaires in a fixed order. The vignettes were also read and completed in a fixed order as a group. Participants were randomly assigned to complete either the questionnaires or the vignettes first to reduce the likelihood of order effects.

When completing the questionnaires, participants started with a brief demographics form followed by the CSQ, MPS, THS, and RSES. Those four measures capture the potential vulnerability factors. Participants also completed the full version of the INQ-15, the CES-D, the SBQ-R, and the Fantasy subscale of the IRI. The CES-D was included as control measure for depressive symptoms. Because all of the vulnerability factors are associated with depression, including the CES-D as a covariate ensured any variance in perceived burdensomeness would be explained solely by the vulnerability factors beyond any influence of depressive symptoms. The SBQ-R was included to provide descriptive statistics regarding how many participants in the study are actually themselves at risk for suicide. The IRI Fantasy subscale was included as a measure of how well participants would be able to empathize with the individuals described in the vignettes.

When reading and responding to the vignettes, participants were presented with all three vignettes, one at a time. Prior to each vignette, they were given these instructions: “Please read the following story. This story comes from an interview with someone describing a specific period of their life. Imagine that you are the person being interviewed. As you read the story, immerse yourself into what it would feel like to have those experiences. Following the story, you will be asked a series of questions. Please answer those questions considering how you might be feeling and behaving if you were in the story you just read.” Following each vignette, participants were first asked to write three things that the person in the vignette was struggling with. This served as a subjective quality control item to ensure that participants read the vignettes. Then they were asked to respond to the INQ-15 perceived burdensomeness subscale. The instructions for the measure, as well as the stem of all six items, were modified to reflect that the person should respond considering how they would feel if they were in the story they just read, not how they have been feeling lately. The analogue measures of perceived burdensomeness were averaged across all three vignettes to calculate one composite score.

After the participant completed the questionnaires and the vignette tasks, they were debriefed. Participants who were deemed at risk based on their SBQ-R score were contacted for a risk assessment and provided with additional mental health resources.

## Results

Given the survey nature of the data, the following strategies were implemented to assure that the data were suitable for further analysis. First, the data was checked to ensure that all values were accurately coded by the online survey and subsequently entered accurately into digital data storage spreadsheets. Then each participant’s responses to the subjective quality control items following each vignette was reviewed to ensure that the participant entered

accurate information to suggest they read each vignette. There were no participants who left this item blank or entered responses that were so vague or inaccurate to indicate that they had not read the vignette, suggesting that participants who were committed enough to complete the survey in its entirety were motivated to thoroughly engage in each component. Then each variable was assessed for normality, two of which were found to be non-normal. Scores from THS were negatively skewed (skewness = -1.45, kurtosis = 4.13), suggesting the sample tended to be on the higher end of the scale in their levels of hopefulness. Additionally, current levels of perceived burdensomeness, from the INQ perceived burdensomeness subscale, were positively skewed (skewness = 1.63, kurtosis = 2.52) suggesting generally low levels of perceived burdensomeness among the sample. This was not surprising and was ultimately consistent with the *a priori* decision to include the additional analogue measure of perceived burdensomeness, allowing for analyses despite potential floor effects in actual levels of perceived burdensomeness. Consistent with recommendations for dealing with non-normality by Tabachnick and Fidell (2007), both variables were transformed using the appropriate log transformation, depending on the direction of skewness, which brought them into an acceptable range of normality (between -1/+1).

Each variable was then checked for any outliers. The CSQ Internalizing subscale, the RSES, and the transformed THS were found to have outlying data points. Again, following recommendations by Tabachnick and Fidell (2007), the outlying data points were not removed from the dataset, as they were believed to be meaningful values and part of the intended population. To address this, continued recommendations from above were followed by transforming the CSQ Internalizing subscale and RSES using an appropriate log transformation to reduce the overall impact of the outlying values. The THS was already transformed to address

non-normality which would have already reduced the impact of the remaining outlying data points.

Following data cleaning, two sets of primary analyses were conducted using separate hierarchical regression models. The first set aimed to test whether attribution style, socially-prescribed perfectionism, hopelessness, and self-esteem predicted current personal perceived burdensomeness while controlling for current depressive symptoms. The second set tested whether they predict the analogue (*i.e.*, response to the vignettes) measure of perceived burdensomeness while controlling for current depressive symptoms. To protect against potential Type I errors due to using multiple models to predict the same outcome variable, a Bonferroni Correction was applied to adjust the level of significance from 0.05 to 0.0125 for the regression models. Bivariate correlations between all predictor and outcome variables are listed in Table 1. The transformed versions of the variables, as described above, are used for CSQ Internal Subscale, THS, RSES, and the INQ-Perceived Burdensomeness subscale.

When considering the correlation table, it is worth noting that the critical variables in question, the primary vulnerability factors, generally have reasonably strong first-order correlations with both the current and analogue levels of perceived burdensomeness, suggesting that the data is appropriate for the subsequent regression models. It is also worth noting that the current levels of perceived burdensomeness and analogue levels of perceived burdensomeness are modestly correlated. This could suggest that the vignette task is an appropriate way to assess perceived burdensomeness without asking directly or simply that individuals who tended to be experiencing perceived burdensomeness in the first place were more likely to report higher levels of perceived burdensomeness in response to the vignettes.

Table 1

*Descriptive statistics, reliability, and correlations for all continuous variables (N=120)*

| Variables   | 1.    | 2.      | 3.     | 4.    | 5.    | 6.    | 7.    | 8.    | 9.    | 10    |
|-------------|-------|---------|--------|-------|-------|-------|-------|-------|-------|-------|
| 1. CSQ-I    | 1.00  |         |        |       |       |       |       |       |       |       |
| 2. CSQ      | 0.55* | 1.00    |        |       |       |       |       |       |       |       |
| 3. MPS-SP   | 0.38* | 0.68*   | 1.00   |       |       |       |       |       |       |       |
| 4. THS      | -0.06 | -0.055* | -0.39* | 1.00  |       |       |       |       |       |       |
| 5. RSES     | 0.35* | 0.75*   | 0.71*  | 0.69* | 1.00  |       |       |       |       |       |
| 6. INQ-PB   | .37*  | 0.65*   | 0.69*  | 0.53* | 0.75* | 1.00  |       |       |       |       |
| 7. CES-D    | 0.34* | 0.70*   | 0.70*  | 0.55* | 0.80* | 0.77* | 1.00  |       |       |       |
| 8. SBQ-R    | 0.16  | 0.29*   | 0.32*  | 0.11  | 0.39* | 0.49* | 0.46* | 1.00  |       |       |
| 9. IRI-FS   | 0.12  | 0.13    | 0.02   | -0.08 | 0.11  | 0.05  | 0.08  | 0.10  | 1.00  |       |
| 10. INQ-PBA | 0.15  | 0.33*   | 0.31*  | 0.19  | 0.42* | 0.34* | 0.28* | 0.39* | 0.08  | 1.00  |
| M           | 0.39  | 4.06    | 58.27  | 1.15  | 1.34  | 1.00  | 18.57 | 5.83  | 16.73 | 22.96 |
| SD          | 0.16  | 1.18    | 17.46  | 0.29  | 0.13  | 0.24  | 12.63 | 3.12  | 6.50  | 8.63  |
| CA          | 0.74  | 0.97    | 0.89   | 0.63  | 0.91  | 0.94  | 0.93  | 0.82  | 0.84  | 0.96  |

*Note.* CSQ-I = Cognitive Style Questionnaire, Internalizing subscale, CSQ = Cognitive Style Questionnaire, MPS-SP = Multidimensional Perfectionism Scale, Socially Prescribed Subscale, THS = The Hope Scale, RSES = Rosenberg Self-Esteem Scale, INQ-PB = Interpersonal Needs Questionnaire, Perceived Burdensomeness Subscale, CES-D = Center for Epidemiological Studies, Depression Questionnaire, SBQ = Suicide Behaviors Questionnaire – Revised, IRI-FS = Interpersonal Reactivity Index - The Fantasy Scale, INQ-PBA = Interpersonal Needs Questionnaire – Perceived Burdensomeness Analogue. *M* = mean. *SD* = standard deviation. *CA* = Cronbach's Alpha. \*  $p < 0.01$ .

### *Manipulation Check*

The IRI-Fantasy subscale was included as a manipulation check for how much connection participants feel with fictional characters or stories. This was included to control for the influence of participants who find themselves generally less able to take the perspective of fictional characters and how this may have influenced their ratings of analogue perceived burdensomeness following the vignettes. Even though the vignettes are true stories, if a participant broadly struggled to relate to fictional characters, they may have struggled to engage meaningfully with the vignettes. In the final sample, the IRI-Fantasy subscale was not significantly correlated with the analogue levels of perceived burdensomeness provided in response to the vignettes ( $r = 0.08, p = 0.41$ ). Given this, it would not have been meaningful to include the IRI-Fantasy scale in the hierarchical regression models where the analogue level of

perceived burdensomeness was the outcome variable. Additionally, because the primary vulnerability factors and current levels of perceived burdensomeness were reasonably correlated with the analogue levels of perceived burdensomeness, it is statistically appropriate to continue with the initial data analysis plan with the assumption that the sample was able to provide meaningful responses to the vignettes.

#### *Predicting Current Levels of Perceived Burdensomeness*

The first analysis used hierarchical multiple regression to determine whether the hopelessness attributions predict current levels of perceived burdensomeness after controlling for current levels of depression. Furthermore, another step was added to the model to determine whether internalizing attributions predict current levels of perceived burdensomeness beyond the variance accounted for by the hopelessness attributions (in which it is not included, as described above).

To control for the role of depression, CES-D scores were entered in step one. This model was significant,  $F(1, 117) = 169.60, p < 0.001$ , and explained 59% of the variance in perceived burdensomeness. In step 2, the CSQ scores were added to determine whether the hopelessness attributions explained any further variance. The contribution to the model was significant,  $F(1, 116) = 7.86, p = 0.006$ , and explained an additional 3% of variance in current levels of perceived burdensomeness after controlling for depression, with both depression and the hopelessness attributions contributing significantly to the overall model. The overall model in this step was significant,  $F(2, 116) = 93.70, p < 0.001$ . In step 3, the Internalizing subscale scores of the CSQ were added. The contribution to the model was not significant,  $F(1, 115) = 0.51, p = 0.48$ , and explained less than an additional 1% of the variance in current levels of perceived burdensomeness. The overall final model, including all blocks, was significant,  $F(3, 115) =$

62.37,  $p < 0.001$ , with depression ( $\beta = 0.62$ ,  $p < 0.001$ ) contributing significantly while hopelessness attributions ( $\beta = 0.20$ ,  $p = 0.03$ ) and internal attributions ( $\beta = 0.05$ ,  $p = 0.48$ ) did not. Overall, according to step two in the model, it is suggested that hopelessness attributions can explain variance in current levels of perceived burdensomeness beyond what is already explained by current levels of depression. However, after adding the internal attributions to the model, neither the hopelessness attributions nor the internal attributions contribute significantly beyond what is accounted for by depression.

The second analysis used hierarchical regression to determine whether socially-prescribed perfectionism explains variance in current levels of perceived burdensomeness beyond current levels of depression. In step 2, after controlling for levels of depression, the socially-prescribed subscale scores of the MPS were added. The contribution to the model was significant,  $F(1, 116) = 14.37$ ,  $p = 0.001$ , and explained an additional 5% of the variance in current levels of perceived burdensomeness. The final model,  $F(2, 116) = 101.68$ ,  $p < 0.001$ , was significant with both predictor variables contributing significantly to the model, with depression ( $\beta = 0.56$ ,  $p < 0.001$ ) explaining more of the variance in current levels of perceived burdensomeness than socially-prescribed perfectionism ( $\beta = 0.30$ ,  $p = 0.001$ ).

The third analysis used hierarchical regression to determine whether hopelessness explained any further variance in current levels of perceived burdensomeness beyond current levels of depression. In step 2, after controlling for levels of depression, THS scores were entered. The contribution to the model was not significant,  $F(1, 116) = 5.03$ ,  $p = 0.03$ , and explained another 2% of additional variance in current levels of perceived burdensomeness. The overall model, including all variables, was significant,  $F(2, 116) = 90.24$ ,  $p < 0.001$ , with

depression ( $\beta = 0.69, p < 0.001$ ) contributing significantly to the overall model while levels of hope did not ( $\beta = -0.16, p = 0.03$ ).

Lastly, a final hierarchical regression was run to determine whether self-esteem explained variance in current levels of perceived burdensomeness after controlling for the influence of current levels of depression. In step 2, after controlling for levels of depression, RSES scores were entered. The contribution to the model was significant,  $F(1, 116) = 14.93, p = 0.001$ , and explained an additional 5% of the variance in current levels of perceived burdensomeness. The overall final model, including all variables, was significant,  $F(2, 116) = 102.35, p < 0.001$ , with both depression ( $\beta = 0.48, p < 0.001$ ) and self-esteem ( $\beta = 0.36, p = 0.001$ ) contributing significantly to the model.

#### *Predicting Analogue Levels of Perceived Burdensomeness*

The first analysis in this set was a hierarchical multiple regression to determine whether hopelessness attributions explained further variance in analogue levels of perceived burdensomeness beyond current levels of depression. Additionally, another step was added to the model to determine whether the internal attributions explained any further variance beyond hopelessness attributions and current levels of depression.

To control for the role of depression, CES-D scores were entered in step one. This model was statistically significant,  $F(1, 118) = 9.96, p = 0.002$ , explaining 8% of the variance in analogue levels of perceived burdensomeness. In step two, CSQ scores were entered to determine whether hopelessness attributions contributed to the model. This contribution was not significant,  $F(1, 117) = 4.99, p = 0.03$ , and explained an additional 4% of variance. In step three, CSQ Internalizing subscale scores were added. This contribution to the model was also not significant,  $F(1, 116) = 0.231, p = 0.63$ , and explained less than an additional 1% of variance.

The overall final model, including all variables, was statistically significant,  $F(3, 116) = 5.14, p = 0.002$ . However, none of the variables contributed significantly to the model in explaining the variance in analogue levels of perceived burdensomeness (depression:  $\beta = 0.08, p = 0.49$ ; hopelessness attributions:  $\beta = 0.30, p = 0.03$ ; internal attributions:  $\beta = -0.05, p = 0.63$ ).

A hierarchical regression was run to determine whether socially-prescribed perfectionism explained variance in analogue levels of perceived burdensomeness. After controlling for levels of depression, the socially-prescribed subscale scores of the MPS were entered in step two. The contribution to the model was not significant,  $F(1, 117) = 3.62, p = 0.059$ , and explained an additional 3% of the variance. The final model, containing both depression and socially-prescribed perfectionism, was significant,  $F(2, 117) = 6.90, p = 0.001$ . However, neither depression ( $\beta = 0.12, p = 0.34$ ), nor socially-prescribed perfectionism ( $\beta = 0.23, p = 0.06$ ), contributed significantly to the model.

Next, an additional hierarchical regression was run to determine whether hopelessness predicts analogue levels of perceived burdensomeness. After controlling for levels of depression, the THS scores were entered in step two. The contribution the model was not significant,  $F(1, 117) = 0.28, p = 0.60$ , and explained less than an additional 1% of the variance in analogue levels of perceived burdensomeness. The overall final model, containing both current levels of depression and hopelessness, was significant,  $F(2, 117) = 5.09, p = 0.008$ . However, neither depression ( $\beta = 0.25, p = 0.021$ ), nor hopelessness ( $\beta = -0.06, p = 0.60$ ), contributed significantly to the model.

Lastly, a final hierarchical regression was run to determine whether self-esteem predicted analogue levels of perceived burdensomeness. After controlling for levels of depression, RSES scores were entered in step two. The contribution to the model was significant,  $F(1, 117) =$

14.67,  $p < 0.001$ , and explained an additional 10% of the variance in analogue levels of perceived burdensomeness. The final model, including both depression and self-esteem, was significant,  $F(2, 117) = 12.89$ ,  $p < 0.001$ . Self-esteem contributed significantly to the model ( $\beta = 0.54$ ,  $p < 0.001$ ), while current levels of depression did not ( $\beta = -0.15$ ,  $p = 0.29$ ).

## Discussion

Perceived burdensomeness, a construct from the Interpersonal Theory of Suicide (Joiner, 2005; Van Orden et al., 2010), involves the experience of feeling like you contribute so little to the people and world around you, that they would be better off without you. Recently, several researchers have found evidence that the experience of perceived burdensomeness is associated with not only suicidal ideation (Akechi et al., 2004; Bryan, 2011; Bryan et al., 2012; Bryant, 2014; Lockman & Servaty-Seib, 2016; Suh et al., 2017; Van Orden et al., 2012, 2006; Wilson et al., 2005) but also suicidal behaviors directly (Cox et al., 2011; Gunn et al., 2012; Joiner et al., 2002; Lester & Gunn, 2012; Motto & Bostrom, 1990), though this connection is still less understood. These data clearly suggest that perceived burdensomeness is one potential avenue worth pursuing as a construct with potential for both research and clinical utility in continuing to understand and address death by suicide. Despite its seeming importance, few studies have empirically tested what factors make some individuals more or less vulnerable to experiencing perceived burdensomeness.

The study described above was conducted to attempt to address this perceived gap in the literature. As part of this exploratory design, it was hypothesized that attributional style (including the internal attribution component), socially-prescribed perfectionism, hopelessness, and self-esteem would predict levels of perceived burdensomeness. Because all these constructs are generally associated with low mood, current depressive symptoms were measured and

controlled for in the analyses. Beyond that, two separate strategies for capturing perceived burdensomeness were used to mitigate any potential floor effects related to using an unselected sample of participants from a university setting. One was a direct measure of current levels of perceived burdensomeness. The other was an analogue measure of perceived burdensomeness provided in response to vignettes describing the situations of three individuals who attempted suicide.

When using current levels of perceived burdensomeness as the outcome, attributional style, socially-prescribed perfectionism, and self-esteem contributed to their separate models in explaining variance beyond what was already captured by current levels of depression. The data did not suggest that internal attributions explained significant variance in perceived burdensomeness beyond hopelessness attributions and depression. The same was found for hopelessness, where no further significant variance in perceived burdensomeness was explained beyond that of current levels of depression. When using the analogue measure of perceived burdensomeness as the outcome measure, only self-esteem explained any further significant variance beyond what was already captured by current levels of depression in the separate models. Neither hopelessness attributions, internal attributions, socially-prescribed perfectionism, nor hopelessness was predictive of analogue levels of perceived burdensomeness beyond current levels of depression.

This appears to be somewhat in line with past research which has found that perceived burdensomeness was associated with a more dysfunctional interpersonal style (Vanyukov, Szanto, Hallquist, Moitra, & Dombrowski, 2017). Specifically, that study found that higher levels of perceived burdensomeness was associated with more neuroticism, impulsivity, and anger and less extraversion and conscientiousness. Though the vulnerability factors identified in this study

seem to have less to do with personality characteristics that might influence how one interacts with others and more to do with how one perceives themselves and how they believe they are perceived by others. This seems in line with the overall conceptualization of perceived burdensomeness, which involves the belief that one is not of value to the people around them.

The most robust predictor identified in this study was low self-esteem. When predicting current levels of perceived burdensomeness, the beta coefficient for self-esteem was greater than any of the other tested predictor variables and even higher than depressive symptoms in its own model. It was also the only predictor variable which was significant across both the current and analogue perceived burdensomeness outcomes. Self-esteem is a construct which has been studied extensively and is well associated with the development of psychopathology (Zeigler-Hill, 2011). Self-esteem is also more specifically associated with the presence of suicidal ideation (Martin et al., 2005). Disentangling the influence of self-esteem when controlling for depression, two constructs that are often associated with one another (Sowislo & Orth, 2013), is somewhat puzzling. In some ways, the essence of depression is feelings of being not worthwhile or good enough. It is possible that the overlapping features of depression and self-esteem really consists of negative affect and disappointment. When controlling for that, what's left of self-esteem may be just a belief that one is not good, competent, or worthy, something that this data strongly suggest is predictive of feelings of perceived burdensomeness. It may be that individuals who struggle with self-esteem, and maybe specifically with the idea that they are not good enough, are more vulnerable to experiencing perceived burdensomeness. Feeling that one is not good, competent, or worthy enough may serve as a foundation to develop and maintain beliefs (which are potentially distorted) that one is not contributing, or may even be causing harm, to those around them. The experience of low self-esteem may also create a situation in which the person

who potentially feels like a burden has no protection from the corresponding self-loathing. For example, if someone recognize that they were a burden, but had adequate self-esteem to protect them from experiencing self-loathing, they may not experience perceived burdensomeness as described in the IPTS. Without self-esteem, it may be more likely that an individual will experience both the perceptions of being a burden in addition to the self-loathing involved in the full experience of perceived burdensomeness subsequently making them vulnerable to desiring suicide.

Attributional style was predictive of current levels of perceived burdensomeness. However, internal attributions did not explain further variance beyond the hopelessness attributions. The hopelessness attributions involve the idea that the cause of negative events in one's life are likely to continue impact them across time, will likely impact them across different domains of their life, and likely have meaningful consequences for who they are as a person. In the same way that these factors are thought to facilitate depression in the learned helplessness hypothesis (Abramson et al., 1978), they may also facilitate the experience of perceived burdensomeness. If one were to think that their experience of being a burden would continue to impact their lives across time and likely had an impact across the different domains of their life, they may be more likely to see that burden as extreme and unending. That type of attribution might be key in the development of self-loathing and the idea that the people around oneself would truly be better if the burdensome they caused was not likely to ever end. When considering that internal attributions, which did not explain variance in perceived burdensomeness, it may be that it does not matter whether one considers the cause of the burden to be internal or external to themselves. Whether or not one is related to the cause of the burden might not matter as much as the fact that one is a burden in the first place. It seems more

important for the development of perceived burdensomeness that being a burden is perceived to impact your life globally and endlessly.

Socially-prescribed perfectionism was also predictive of current levels of perceived burdensomeness. To review, socially-prescribed perfectionism is specifically related to feeling that one is not meeting the expectations of the individuals around them. Perfectionism often involves standards that are unachievably high and provide little room for error or misstep. If one has an idea about the standards that the people around them hold, and that idea is potentially distorted in such a way that those standards are not realistic, it might be easier for that individual to feel like they are a burden. Everyday events such as reaching out for social support, asking for help, or falling through on an obligation might be misinterpreted severely as extreme burden. Furthermore, if someone believes that the people around them have high standards that they are not meeting, it is also possible that the individual has high, potentially unrealistic standards for themselves which are not being met. This may lead to the facilitation of self-loathing. By not meeting the standards of those around you, you feel like a burden. By not meeting the standards of those around you or the standards you have for yourself, you experience self-loathing. Taken together, this may explain the pathway through which socially-prescribed perfectionism, and perfectionism more generally, leads to an increased risk of experiencing perceived burdensomeness.

Whereas self-esteem, attributional style, and socially-prescribed perfectionism were significant predictors of perceived burdensomeness, hopelessness was not. There are a multiple potential explanations for this. First, it is possible that using the THS to capture hopelessness was not effective. Although the THS is suggested as a replacement for more traditional scales, such as the Beck Hopelessness Scale (Beck et al., 1974), for non-clinical samples (Steed, 2001), it

might be that low levels of hope do not directly equate to high levels of hopelessness. Another explanation may be that there is simply too much overlap between hopelessness and depression to orthogonally identify the independent influence of both with this study design. Hopelessness is certainly thought to be involved in the development and maintenance of depression (Abramson et al., 1989) and is even captured in one item of the CES-D (Radloff, 1977), which was used to control for depressive symptoms. Another explanation may be that hopelessness is not involved in the experience of perceived burdensomeness. However, this seems unlikely given the robust link between hopelessness and both suicidal ideation and behavior (Beck et al., 2006) in addition to past recommendations for further investigation into the link hopelessness may play in the IPTS (Ribeiro & Joiner, 2009).

This study contains additional limitations which are worth considering. First, like much of the literature in this area, this study is cross-sectional in nature. Future studies would benefit from taking either a more longitudinal or ecological approach. For example, Klonsky and May (2015) recently introduced their Three-Step Theory of Suicide which attempts to explain suicide through an “Ideation to Action” Framework. This approach seeks to understand what is happening in the moments, hours, or days before an individual experiences suicidal ideation, a question that ecological momentary assessment data strategies may be uniquely suited to answer. Examining perceived burdensomeness through this lens could provide a new perspective beyond cross-sectional methodologies where one could determine what vulnerability factors are leading to changes in perceived burdensomeness in real time and how those changes in perceived burdensomeness might be facilitating suicidal ideation in the moment.

Another limitation is that these hypotheses were exploratory in nature and were tested with survey data. Although the findings of this study may have meaningful implications for

future research, they should be interpreted with a certain degree of caution. Future research should aim to replicate these vulnerability factors using more rigorous designs, stronger *a priori* hypotheses, and more experimental control. One potential avenue might involve using previously identified methods which have been successful in experimentally inducing perceived burdensomeness (Collins et al., 2016). The findings of this study could be replicated by measuring attributional style, socially-prescribed perfectionism, and self-esteem and determining whether these factors predict how much or how little participants are impacted by methods which have been successful in inducing perceived burdensomeness.

Beyond improving the experimental control and diversifying the experimental methods when studying these constructs, future research should also continue to test for any impact of interventions targeting these vulnerability factors. Past interventions have been successful in reducing levels of perceived burdensomeness but not suicidal ideation (Hill, 2016). It is possible that targeting multiple sources of distress, related to attributional style, socially-prescribed perfectionism, and self-esteem, may allow for an intervention which reduces not only perceived burdensomeness directly but also the corresponding suicidal ideation. Though the exact nature of these vulnerability factors, including the strength and temporal direction of their influence, should be better understood before attempting to develop an intervention targeting these constructs.

Though the findings of this study are exploratory and somewhat preliminary in nature, they may have some practical implications for clinicians in practice. There are several suicide risk assessment instruments that are commonly used in practice. However, the literature suggests that these instruments need further improvements to be useful in accurately predicting suicide or suicide risk (Carter et al., 2017; Runeson et al., 2017). This leaves clinicians in practice with less

support and direction in assessing who is at risk of suicide and how severe that risk might be. Using the IPTS as a framework, clinicians may be able to screen for high levels of perceived burdensomeness through both the INQ or clinical interviewing strategies. If patients appear to be experiencing high levels of perceived burdensomeness, addressing attributional style, socially-prescribed perfectionism, and low self-esteem through behavioral, cognitive, and interpersonal interventions may be an appropriate, protective strategy when used in addition to other safety planning strategies.

In closing, suicide continues to be a major public health concerns not only in the United States (CDC, 2014) but also around the world (WHO, 2016). Among the many efforts to better understand and address the rates of suicide, the IPTS (Joiner, 2005; Van Orden et al., 2010) has emerged as a well-studied theory with considerable research support. Among the IPTS, perceived burdensomeness has been identified as a robust predictor of suicidal ideation and, to a less understood extent, suicidal behavior (Hill & Pettit, 2014). In continuing to better understand and address suicide, perceived burdensomeness is a construct that appears to have both clinical and research utility. Despite this, very few studies have attempted to identify what psychological factors, beyond personality characteristics, make some individuals more or less likely to experience perceived burdensomeness. To address this perceived gap in the literature, this exploratory study was conducted to begin to identify such factors. Attributional style, socially-prescribed perfectionism, and self-esteem were identified as potential vulnerability factors worth further investigation. All three factors explained variance in current levels of perceived burdensomeness beyond current levels of depression while self-esteem also explained variance in analogue levels of perceived burdensomeness beyond depression. These promising findings have the potential to guide and influence future research that seeks both to better understand

perceived burdensomeness as a construct but also those that attempt to identify strategies for reducing perceived burdensomeness and subsequent suicidal ideation.

## REFERENCES

- Abramson, L. Y., Metalsky, G. I., & Alloy, L. B. (1989). Hopelessness depression: A theory-based subtype of depression. *Psychological Review*, *96*(2), 358–372.  
<https://doi.org/10.1037/0033-295X.96.2.358>
- Abramson, L. Y., Seligman, M. E., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology*, *87*(1), 49–74.  
<https://doi.org/10.1037/0021-843X.87.1.49>
- Akechi, T., Okuyama, T., Sugawara, Y., Nakano, T., Shima, Y., & Uchitomi, Y. (2004). Major Depression, Adjustment Disorders, and Post-Traumatic Stress Disorder in Terminally Ill Cancer Patients: Associated and Predictive Factors. *Journal of Clinical Oncology*, *22*(10), 1957–1965. <https://doi.org/10.1200/JCO.2004.08.149>
- Alloy, L. B., Abramson, L. Y., Hogan, M. E., Whitehouse, W. G., Rose, D. T., Robinson, M. S., ... Lapkin, J. B. (2000). The Temple-Wisconsin Cognitive Vulnerability to Depression Project: Lifetime history of Axis I psychopathology in individuals at high and low cognitive risk for depression. *Journal of Abnormal Psychology*, *109*(3), 403–418.  
<https://doi.org/10.1037/0021-843X.109.3.403>
- Babak, M. A., Snyder, C. R., & Yoshinobu, L. (1993). Psychometric Properties of the Hope Scale: A Confirmatory Factor Analysis. *Journal of Research in Personality*, *27*(2), 154–169. <https://doi.org/10.1006/jrpe.1993.1011>
- Bastiampillai, T., Sharfstein, S. S., & Allison, S. (2016). Increase in US Suicide Rates and the Critical Decline in Psychiatric Beds. *JAMA*, *316*(24), 2591–2592.  
<https://doi.org/10.1001/jama.2016.16989>

- Beck, A. T., Brown, G., Berchick, R. J., Stewart, B. L., & Steer, R. A. (2006). Relationship Between Hopelessness and Ultimate Suicide: A Replication With Psychiatric Outpatients. *FOCUS*, 4(2), 291–296. <https://doi.org/10.1176/foc.4.2.291>
- Beck, A. T., Weissman, A., Lester, D., & Trexler, L. (1974). The measurement of pessimism: The Hopelessness Scale. *Journal of Consulting and Clinical Psychology*, 42(6), 861–865. <https://doi.org/10.1037/h0037562>
- Bernadette Gray-Little, Valerie S. L. Williams, & Timothy D. Hancock. (1997). An Item Response Theory Analysis of the Rosenberg Self-Esteem Scale. *Personality and Social Psychology Bulletin*, 23(5), 443–451. <https://doi.org/10.1177/0146167297235001>
- Bhar, S., Ghahramanlou-Holloway, M., Brown, G., & Beck, A. T. (2008). Self-Esteem and Suicide Ideation in Psychiatric Outpatients. *Suicide and Life-Threatening Behavior*, 38(5), 511–516. <https://doi.org/10.1521/suli.2008.38.5.511>
- Bryan, C. J. (2011). The clinical utility of a brief measure of perceived burdensomeness and thwarted belongingness for the detection of suicidal military personnel. *Journal of Clinical Psychology*, 67(10), 981–992. <https://doi.org/10.1002/jclp.20726>
- Bryan, C. J., Clemans, T. A., & Hernandez, A. M. (2012). Perceived burdensomeness, fearlessness of death, and suicidality among deployed military personnel. *Personality and Individual Differences*, 52(3), 374–379. <https://doi.org/10.1016/j.paid.2011.10.045>
- Bryant, G. S. (2014). *Childhood trauma, suicidal ideation, perceived burdensomeness, and thwarted belongingness among adults with bipolar disorder*. ProQuest Information & Learning, US. (2014-99120-508).
- Carter, G., Milner, A., McGill, K., Pirkis, J., Kapur, N., & Spittal, M. J. (2017). Predicting suicidal behaviours using clinical instruments: Systematic review and meta-analysis of

- positive predictive values for risk scales. *The British Journal of Psychiatry*, 210(6), 387–395. <https://doi.org/10.1192/bjp.bp.116.182717>
- Chu, C., Buchman-Schmitt, J. M., Stanley, I. H., Hom, M. A., Tucker, R. P., Hagan, C. R., ... Joiner, T. E. (2017). The interpersonal theory of suicide: a systematic review and meta-analysis of a decade of cross-national research. *Psychological Bulletin*, ePub(ePub), ePub. <https://doi.org/10.1037/bul0000123>
- Collins, K. R. L., Best, I., Stritzke, W. G. K., & Page, A. C. (2016). Mindfulness and zest for life buffer the negative effects of experimentally-induced perceived burdensomeness and thwarted belongingness: Implications for theories of suicide. *Journal of Abnormal Psychology*, 125(5), 704–714. <https://doi.org/10.1037/abn0000167>
- Cox, D. W., Ghahramanlou-Holloway, M., Greene, F. N., Bakalar, J. L., Schendel, C. L., Nademin, M. E., ... Kindt, M. (2011). Suicide in the United States Air Force: Risk factors communicated before and at death. *Journal of Affective Disorders*, 133(3), 398–405. <https://doi.org/10.1016/j.jad.2011.05.011>
- Davis, M. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology*, 10(85).
- DeShong, H. L., Tucker, R. P., O'Keefe, V. M., Mullins-Sweatt, S. N., & Wingate, L. R. (2015). Five factor model traits as a predictor of suicide ideation and interpersonal suicide risk in a college sample. *Psychiatry Research*, 226(1), 217–223. <https://doi.org/10.1016/j.psychres.2015.01.002>
- Digman, J. M. (1990). Personality Structure: Emergence of the Five-Factor Model. *Annual Review of Psychology*, 41(1), 417–440. <https://doi.org/10.1146/annurev.ps.41.020190.002221>

- Durkheim, É. (1897). *Le suicide: étude de sociologie*. F. Alcan.
- Flett, G. L., & Hewitt, P. L. (2002). Perfectionism and maladjustment: An overview of theoretical, definitional, and treatment issues. In G. L. Flett, P. L. Hewitt, G. L. Flett (Ed), & P. L. Hewitt (Ed) (Eds.), *Perfectionism: Theory, research, and treatment*. (pp. 5–31). <https://doi.org/10.1037/10458-001>
- Greening, L., & Stoppelbein, L. (2002). Religiosity, Attributional Style, and Social Support as Psychosocial Buffers for African American and White Adolescents' Perceived Risk for Suicide. *Suicide and Life-Threatening Behavior*, 32(4), 404–417. <https://doi.org/10.1521/suli.32.4.404.22333>
- Gunn, J. F., Lester, D., Haines, J., & Williams, C. L. (2012). Thwarted Belongingness and Perceived Burdensomeness in Suicide Notes. *Crisis*, 33(3), 178–181. <https://doi.org/10.1027/0227-5910/a000123>
- Haefel, G. J., Gibb, B. E., Metalsky, G. I., Alloy, L. B., Abramson, L. Y., Hankin, B. L., ... Swendsen, J. D. (2008). Measuring cognitive vulnerability to depression: Development and validation of the cognitive style questionnaire. *Clinical Psychology Review*, 28(5), 824–836. <https://doi.org/10.1016/j.cpr.2007.12.001>
- Hewitt, P., & L. Flett, G. (1990). Perfectionism and depression: A multidimensional analysis. *Journal of Social Behavior & Personality*, 5, 423–438.
- Hewitt, P. L., Flett, G. L., Turnbull-Donovan, W., & Mikail, S. F. (1991). The Multidimensional Perfectionism Scale: Reliability, validity, and psychometric properties in psychiatric samples. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 3(3), 464–468. <https://doi.org/10.1037/1040-3590.3.3.464>

- Hill, Ryan M., & Pettit, J. W. (2014). Perceived Burdensomeness and Suicide-Related Behaviors in Clinical Samples: Current Evidence and Future Directions. *Journal of Clinical Psychology, 70*(7), 631–643. <https://doi.org/10.1002/jclp.22071>
- Hill, Ryan M., Rey, Y., Marin, C. E., Sharp, C., Green, K. L., & Pettit, J. W. (2015). Evaluating the Interpersonal Needs Questionnaire: Comparison of the Reliability, Factor Structure, and Predictive Validity across Five Versions. *Suicide and Life-Threatening Behavior, 45*(3), 302–314. <https://doi.org/10.1111/sltb.12129>
- Hill, Ryan Michael. (2016). *Open trial and pilot randomized controlled trial of a novel program to reduce perceived burdensomeness*. ProQuest Information & Learning, US. (2016-42148-150).
- Hirsch, J. K., Wolford, K., LaLonde, S. M., Brunk, L., & Parker-Morris, A. (2009). Optimistic Explanatory Style as a Moderator of the Association Between Negative Life Events and Suicide Ideation. *Crisis, 30*(1), 48–53. <https://doi.org/10.1027/0227-5910.30.1.48>
- Joiner, T. (2005). *Why People Die by Suicide*. Harvard University Press.
- Joiner, T. E., Pettit, J. W., Walker, R. L., Voelz, Z. R., Cruz, J., Rudd, M. D., & Lester, D. (2002). Perceived Burdensomeness And Suicidality: Two Studies On The Suicide Notes Of Those Attempting And Those Completing Suicide. *Journal of Social and Clinical Psychology, 21*(5), 531–545. <https://doi.org/10.1521/jscp.21.5.531.22624>
- Joiner, T. E., & Rudd, M. D. (1995). Negative Attributional Style for Interpersonal Events and the Occurrence of Severe Interpersonal Disruptions as Predictors of Self-Reported Suicidal Ideation. *Suicide and Life-Threatening Behavior, 25*(2), 297–304. <https://doi.org/10.1111/j.1943-278X.1995.tb00927.x>

- Kanzler, K. E., Bryan, C. J., McGeary, D. D., & Morrow, C. E. (2012). Suicidal Ideation and Perceived Burdensomeness in Patients with Chronic Pain. *Pain Practice, 12*(8), 602–609. <https://doi.org/10.1111/j.1533-2500.2012.00542.x>
- Klonsky, E. D., & May, A. M. (2015). The Three-Step Theory (3ST): A New Theory of Suicide Rooted in the “Ideation-to-Action” Framework. *International Journal of Cognitive Therapy, 8*(2), 114–129. <https://doi.org/10.1521/ijct.2015.8.2.114>
- Lester, D., & Gunn III, J. F. (2012). Perceived Burdensomeness and Thwarted Belonging: An Investigation of the Interpersonal Theory of Suicide. *Clinical Neuropsychiatry, 9*(6), 221–224.
- Lewinsohn, P. M., Rohde, P., & Seeley, J. R. (1994). Psychosocial risk factors for future adolescent suicide attempts. *Journal of Consulting and Clinical Psychology, 62*(2), 297–305. <https://doi.org/10.1037/0022-006X.62.2.297>
- Lockman, J. D., & Servaty-Seib, H. L. (2016). College student suicidal ideation: Perceived burdensomeness, thwarted belongingness, and meaning made of stress. *Death Studies, 40*(3), 154–164. <https://doi.org/10.1080/07481187.2015.1105325>
- Martin, G., Richardson, A. S., Bergen, H. A., Roeger, L., & Allison, S. (2005). Perceived academic performance, self-esteem and locus of control as indicators of need for assessment of adolescent suicide risk: implications for teachers. *Journal of Adolescence, 28*(1), 75–87. <https://doi.org/10.1016/j.adolescence.2004.04.005>
- Martín-Albo, J., Núñez, J. L., Navarro, J. G., & Grijalvo, F. (2007). The Rosenberg Self-Esteem Scale: Translation and Validation in University Students. *The Spanish Journal of Psychology, 10*(2), 458–467. <https://doi.org/10.1017/S1138741600006727>

- Motto, J. A., & Bostrom, A. (1990). Empirical indicators of near-term suicide risk. *Crisis: The Journal of Crisis Intervention and Suicide Prevention*, *11*(1), 52–59.
- O'Connor, R. C. (2007). The Relations between Perfectionism and Suicidality: A Systematic Review. *Suicide & Life-Threatening Behavior*, *37*(6), 698–714.
- Olfson, M., Blanco, C., Wall, M., Liu, S.-M., Saha, T. D., Pickering, R. P., & Grant, B. F. (2017). National Trends in Suicide Attempts Among Adults in the United States. *JAMA Psychiatry*, *74*(11), 1095–1103. <https://doi.org/10.1001/jamapsychiatry.2017.2582>
- Osman, A., Bagge, C. L., Gutierrez, P. M., Konick, L. C., Kopper, B. A., & Barrios, F. X. (2001). The Suicidal Behaviors Questionnaire-Revised (SBQ-R): Validation with Clinical and Nonclinical Samples. *Assessment*, *8*(4), 443–454.  
<https://doi.org/10.1177/107319110100800409>
- Peak, N. J., Overholser, J. C., Ridley, J., Braden, A., Fisher, L., Bixler, J., & Chandler, M. (2016). Too much to bear: Psychometric evidence supporting the Perceived Burdensomeness Scale. *Crisis: The Journal of Crisis Intervention and Suicide Prevention*, *37*(1), 59–67. <https://doi.org/10.1027/0227-5910/a000355>
- Peterson, C., Semmel, A., Baeyer, C. von, Abramson, L. Y., Metalsky, G. I., & Seligman, M. E. P. (1982). The attributional Style Questionnaire. *Cognitive Therapy and Research*, *6*(3), 287–299. <https://doi.org/10.1007/BF01173577>
- Priester, M. J., & Clum, G. A. (1992). Attributional style as a diathesis in predicting depression, hopelessness, and suicide ideation in college students. *Journal of Psychopathology and Behavioral Assessment*, *14*(2), 111–122. <https://doi.org/10.1007/BF00965171>

- Radloff, L. S. (1977). The CES-D Scale: A Self-Report Depression Scale for Research in the General Population. *Applied Psychological Measurement, 1*(3), 385–401.  
<https://doi.org/10.1177/014662167700100306>
- Rasmussen, K. A., Slish, M. L., Wingate, L. R., Davidson, C. L., & Grant, D. M. (2012). Can perceived burdensomeness explain the relationship between suicide and perfectionism? *Suicide and Life-Threatening Behavior, 42*(2), 121–128. <https://doi.org/10.1111/j.1943-278X.2011.00074.x>
- Ribeiro, J. D., & Joiner, T. E. (2009). The interpersonal-psychological theory of suicidal behavior: current status and future directions. *Journal of Clinical Psychology, 65*(12), 1291–1299. <https://doi.org/10.1002/jclp.20621>
- Rosenberg, M. (1965). *Society and the Adolescent Self-Image*. Princeton University Press.
- Rotheram-Borus, M. J., Trautman, P. D., Dopkins, S. C., & Shrout, P. E. (1990). Cognitive style and pleasant activities among female adolescent suicide attempters. *Journal of Consulting and Clinical Psychology, 58*(5), 554–561. <https://doi.org/10.1037/0022-006X.58.5.554>
- Runeson, B., Odeberg, J., Pettersson, A., Edbom, T., Adamsson, I. J., & Waern, M. (2017). Instruments for the assessment of suicide risk: A systematic review evaluating the certainty of the evidence. *PLOS ONE, 12*(7), e0180292.  
<https://doi.org/10.1371/journal.pone.0180292>
- Servaty-Seib, H. L., Lockman, J., Shemwell, D., & Reid Marks, L. (2016). International and domestic students, perceived burdensomeness, belongingness, and suicidal ideation. *Suicide and Life-Threatening Behavior, 46*(2), 141–153.  
<https://doi.org/10.1111/sltb.12178>

- Slaney, R. B., Rice, K. G., Mobley, M., Trippi, J., & Ashby, J. S. (2001). The Revised Almost Perfect Scale. *Measurement & Evaluation in Counseling & Development*, 34(3), 130.
- Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., ... Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology*, 60(4), 570–585. <https://doi.org/10.1037/0022-3514.60.4.570>
- Sowislo, J. F., & Orth, U. (2013). Does low self-esteem predict depression and anxiety? A meta-analysis of longitudinal studies. *Psychological Bulletin*, 139(1), 213–240.
- Steed, L. (2001). Further Validity and Reliability Evidence for Beck Hopelessness Scale Scores in a Nonclinical Sample. *Educational and Psychological Measurement*, 61(2), 303–316. <https://doi.org/10.1177/00131640121971121>
- Suh, S., Ebesutani, C. K., Hagan, C. R., Rogers, M. L., Hom, M. A., Ringer, F. B., ... Joiner, T. E. (2017). Cross-cultural relevance of the Interpersonal Theory of suicide across Korean and U.S. undergraduate students. *Psychiatry Research*, 251, 244–252. <https://doi.org/10.1016/j.psychres.2017.02.005>
- Summerville, M. B., Kaslow, N. J., Abbate, M. F., & Cronan, S. (1994). Psychopathology, family functioning, and cognitive style in urban adolescents with suicide attempts. *Journal of Abnormal Child Psychology*, 22(2), 221–235. <https://doi.org/10.1007/BF02167901>
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (Seventh edition). Boston: Pearson.
- Van Orden, K. A., Cukrowicz, K. C., Witte, T. K., & Joiner Jr., T. E. (2012). Thwarted belongingness and perceived burdensomeness: Construct validity and psychometric

- properties of the Interpersonal Needs Questionnaire. *Psychological Assessment*, 24(1), 197–215. <https://doi.org/10.1037/a0025358>
- Van Orden, K. A., Lynam, M. E., Hollar, D., & Joiner, T. E. (2006). Perceived Burdensomeness as an Indicator of Suicidal Symptoms. *Cognitive Therapy and Research*, 30(4), 457–467. <https://doi.org/10.1007/s10608-006-9057-2>
- Van Orden, K. A., Witte, T. K., Cukrowicz, K. C., Braithwaite, S. R., Selby, E. A., & Joiner Jr., T. E. (2010). The interpersonal theory of suicide. *Psychological Review*, 117(2), 575–600. <https://doi.org/10.1037/a0018697>
- Vanyukov, P. M., Szanto, K., Hallquist, M., Moitra, M., & Dombrovski, A. Y. (2017). Perceived burdensomeness is associated with low-lethality suicide attempts, dysfunctional interpersonal style, and younger rather than older age. *International Journal of Geriatric Psychiatry*, 32(7), 788–797. <https://doi.org/10.1002/gps.4526>
- Wilson, K. G., Curran, D., & McPherson, C. J. (2005). A Burden to Others: A Common Source of Distress for the Terminally Ill. *Cognitive Behaviour Therapy*, 34(2), 115–123. <https://doi.org/10.1080/16506070510008461>
- Wilson, K. G., Kowal, J., Henderson, P. R., McWilliams, L. A., & Péloquin, K. (2013). Chronic pain and the interpersonal theory of suicide. *Rehabilitation Psychology*, 58(1), 111–115. <https://doi.org/10.1037/a0031390>
- Zeigler-Hill, V. (2011). The Connections Between Self-Esteem and Psychopathology. *Journal of Contemporary Psychotherapy*, 41(3), 157–164. <https://doi.org/10.1007/s10879-010-9167-8>